

LEAD IN THE WORKPLACE

CALIFORNIA
Occupational Lead
Poisoning Prevention
Program



Lance C., a construction worker, called the state health department's occupational lead program concerned about the effects of lead on his health. He had been working on a job retrofitting a major bridge. A blood test provided by his employer showed that his blood lead level was

27 ug/dl* –more than 10 times the amount of the average adult in the United States. Program staff answered Lance's questions and gave him information on lead-safe work methods.

Data from the **California Occupational Blood Lead Registry** show that Lance is not alone. Between 1995

* Micrograms of lead per deciliter of blood

and 1999, more than 2500 workers in California were found to have high blood lead levels (25 ug/dl or greater). Many more workers may be poisoned but never get a blood lead level test.

The lead in these workers' blood may be damaging their brains, kidneys, reproductive systems and more.

By law, employers must test the blood lead level of employees who are exposed to lead on the job. The results of these blood tests show whether the person is being exposed to too much lead.

The Occupational Lead Poisoning Prevention Program (OLPPP) collects test results from laboratories and enters them in the **California Occupational Blood Lead Registry**. This report presents our results for 1995 through 1999. ●

California's Battery Industries: Making Progress

Companies that manufacture or recycle lead-acid batteries understand the dangers of lead and nearly all provide blood testing to their workers. In fact, over 95% of lead-exposed battery workers in California are tested. As a result, we have a clear picture of how common lead poisoning is in these two industries. OLPPP doesn't have as complete information for any other industry.

Blood test results show that the California battery industries have made progress in reducing worker exposure to lead. In 1993 there were seven workers with very high blood lead levels (60 ug/dl or greater). In 1994 there were two, and in 1995 there was only one. Between 1996 and 1999 no workers in the California battery industries had a level this high.



The battery industries are moving in the right direction, but more work needs to be done – hundreds of battery workers still have high lead levels (higher than 25 ug/dl and in many cases higher than 40 ug/dl). ●

Key Findings (1995-1999)

OLPPP received reports for 2,657 individuals with high lead levels (25 ug/dl or greater). One in five (557) had a blood lead level of 40 ug/dl or greater and may have suffered serious damage to their health.

Who is getting poisoned?

- Most of the workers with high lead levels worked in manufacturing (64%), followed by construction (18%), and service industries (13%).
- The percentage of Hispanic workers in the Registry (52%) was much higher than the percentage of the California workforce that is Hispanic (28%).
- OLPPP investigated 39 cases of serious lead poisoning (blood lead levels from 60 to 221 ug/dl). Painting and radiator repair had the largest number of cases.

- OLPPP investigated 40 cases of children and 1 adult who were poisoned by lead brought home from the workplace on clothes and shoes (blood lead levels from 10 to 52 ug/dl). The largest number of poisoned children lived with radiator repair workers.

Why is lead poisoning still a problem?

- Lead poisoning often results from a lack of awareness of lead hazards, even in industries where lead has been recognized as a problem for years.
- Small businesses in particular have difficulty setting up a lead safety program and need education and direct assistance.
- Many employers are not providing lead-exposed workers with blood tests as required by the Cal/OSHA lead standards. ●

What does OLPPP do with the blood test results?

OLPPP uses test results to select the industries and employers that need our help the most. Since 1995, OLPPP has provided training or held seminars in 5 of the 10 industries with the largest number of workers with high blood test results. The industries are radiator repair, residential painting, industrial/commercial painting, scrap metal recycling, and firing ranges.

Lead Awareness Seminars for Construction

OLPPP held 34 half-day lead safety awareness seminars around the state and reached over 1300 residential painters and remodelers. A highlight of the seminars was a residential painting contractor who shared how he gets the job done safely.

OLPPP also held six half-day seminars for industrial and commercial contractors and union representatives about work on bridges, commercial building remodeling and earthquake retrofits that involves lead. Over 500 contractors and representatives attended the seminars. ●



Repairing automotive radiator using lead/tin solder

LeadSTAR: On-site assistance to radiator repair shops

OLPPP's LeadSTAR program visited over 60 radiator repair shops around the state and provided free training in English and Spanish for owners and workers. Shop owners received a bilingual lead safety training video, safety posters, and placards for

washrooms. OLPPP also provided free air monitoring for lead if requested. OLPPP picked the shops that do the most repair work to participate in the project.



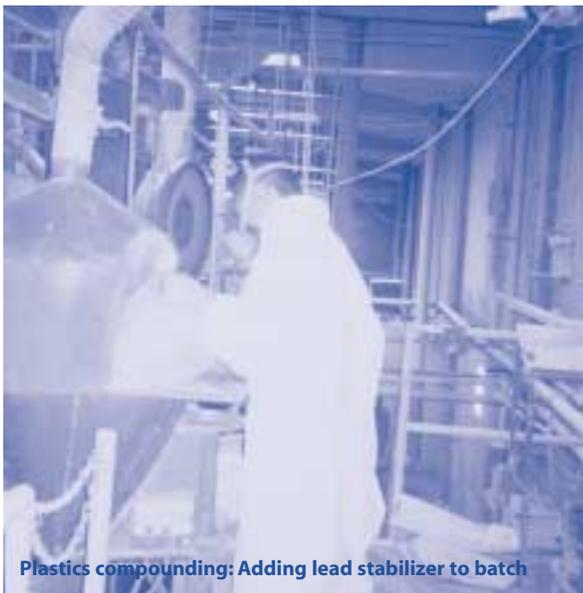
Construction contractors discuss lead safety.

GENERAL INDUSTRY: PLASTICS COMPOUNDING

What happened? In 1997, OLPPP identified three workers at a plastics compounding company with severe lead poisoning (blood lead levels: 108 – 164 ug/dl). This was the first time a serious case of lead poisoning had been reported in the California plastics industry. The case was only uncovered when one worker, suffering from abdominal pain, fatigue, and constipation, asked his personal doctor for a blood test because he saw “lead” printed on bags of powder at work.

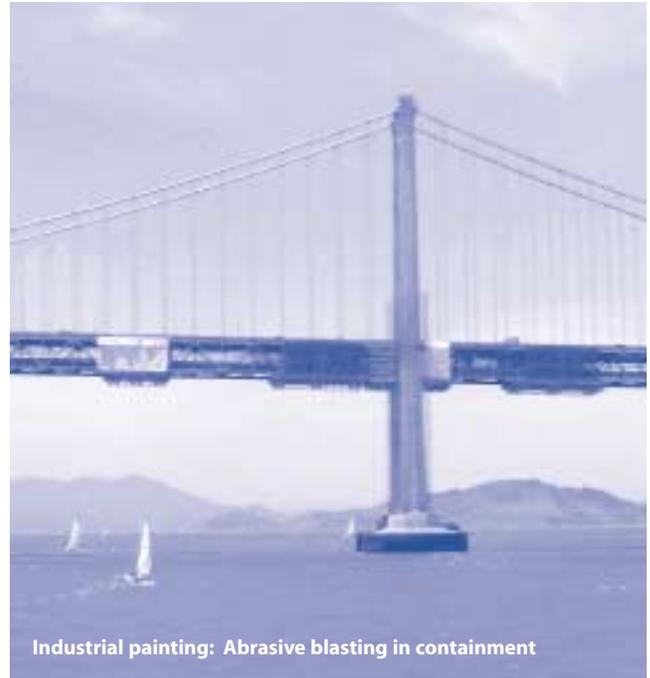
The workers, wearing only paper dust masks, scooped six to eight pounds of pure lead sulfate powder from a bag into a mixing vat. Lead sulfate is a stabilizer in plastics used for electrical devices. The Safety Sheet that accompanied the product did not mention the serious health effects of lead, and only recommended that users wear a respirator for “fine dust.” The employer mistakenly thought this meant a dust mask was sufficient. The company had no lead safety program and the workers had never been blood tested. OLPPP worked with the employer to set up a lead safety program. Ultimately, the employer found a lead-free stabilizer substitute.

What was learned? Serious overexposure to lead is possible in compounding plastics for use in electrical products. Because the information on Safety Sheets is not always complete, employers and others should get additional health hazard and safe handling information from other sources such as Cal/OSHA Consultation and the state health department’s Occupational Health Branch. ●



Plastics compounding: Adding lead stabilizer to batch

CONSTRUCTION INDUSTRY: BRIDGE PAINTING



Industrial painting: Abrasive blasting in containment

What happened? In 1998, OLPPP received one of the highest blood lead levels ever in its history. An industrial painter had been doing abrasive blasting to remove paint on a major bridge retrofit job. Company-provided blood tests showed that the worker’s lead level had increased from 7 to 221 ug/dl in about two months.

The worker was wearing a half-mask respirator during blasting. The company’s air monitoring results showed that a respirator that provided clean air was needed. Cal/OSHA inspected this job and the company received several citations, including a citation for failing to make sure that workers used the right respirator.

What was learned? Abrasive blasting lead paint on steel structures often causes extremely high air lead levels. Respirators that provide clean air are usually needed, although the selection of the right respirator must be based on air monitoring data. Blood testing should be done at least monthly on abrasive blasting jobs to detect failures in protection before workers are seriously lead poisoned. Close supervision is needed in high-exposure construction work to make sure that the company’s lead safety plan is followed consistently. ●

Missing Information

Not all employers are testing.

Since the state health department gets blood test results you might think that we have a pretty good idea where lead poisoning is occurring – but we see only part of the picture. Why? Because not all employers provide blood testing to their lead-exposed employees.

OLPPP looked at how many employers were providing blood lead testing in four industries in which significant lead exposure is possible. As the table below shows, except for battery manufacturing, too few employers are doing testing.

Industry	Percentage of Companies Testing*
Lead-acid battery mfg.	87%
Non-ferrous foundries (lead-using)	56%
Radiator repair (copper-brass)	14%
Wrecking and demolition	1%

Because so many lead-exposed workers never get a blood lead test, many workers may be getting poisoned without anyone knowing it. ●

* Percentage of companies appearing in the Registry in the year in which each study was conducted.

Filling the Gaps

If you use or disturb lead in your business and you're not blood testing, now's the time to get started.

Why should I provide blood lead testing to my employees?

Blood lead testing helps you determine if your lead safety program is working. High blood lead levels indicate that you have a problem that needs to be corrected. If you're providing regular blood testing you can identify lead exposure problems before an employee gets poisoned. You may save money in the long run by avoiding workers' compensation claims and the medical costs of a poisoned employee. Also, Cal/OSHA requires that employers provide blood testing to employees with lead exposure.

How do I get started?

Call OLPPP for help setting up a lead medical program, including blood lead testing. We can give you materials that explain how to get started and help you find a doctor or clinic in your area who can provide testing. ●

RESOURCES

OLPPP – The Occupational Lead Poisoning Prevention Program, California Department of Health Services

If you need help setting up a lead safety program or have questions about blood lead testing call us at 510/622-4332 or visit www.dhs.ca.gov/ohb

Cal/OSHA Consultation Service (800) 963-9424

The Consultation Service offers free health and safety assistance upon request. It does not enforce regulations or fine employers. It does not share any information with Cal/OSHA enforcement.

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University-based Occupational and Environmental Health Clinics

For service or referral to a doctor qualified in occupational health, these clinics are a good place to start.

Irvine	(949) 824-8641
Los Angeles	(310) 794-8144
Sacramento	(916) 734-3572
San Diego	(619) 294-6206
San Francisco	(415) 206-4320

This report is based on the technical report, *Blood Lead Levels in California Workers 1995-1999 – Report of the California Occupational Blood Lead Registry*. To get a copy of the full report, please call (510) 622-4332.

To obtain a copy of this document in an alternate format, please contact:

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Occupational Lead Poisoning Prevention Program
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(510) 622-4300
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or CA Relay Service at 1-800-735-2929

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